



## Safer pumping of dangerous fluids with mag drive centrifugal pumps

*Nowadays, most goods are transported by ship or by road container tanks. It is important for the process, people and environment that the storage and shipment method is safe and economical.*

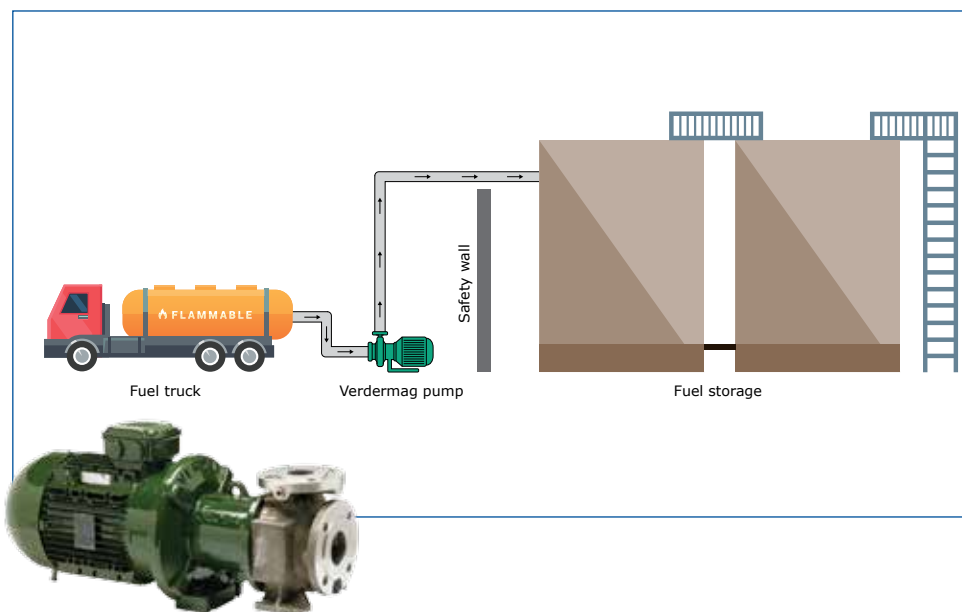
There are risks when transporting fuel, crude oil, chemicals, radioactive or contaminated material and compressed gases, not only for the unloading or loading process but also for the executive employee and the environment. It is important that the fluid is unloaded and stored safely and without leakage.

Where possible, the harmful fluids are produced or processed locally to minimize the risk of releasing a hazardous substance into the environment or exposing an employee to the risk of direct contact. It is true that there are almost universally strict regulations as to the production of hazardous chemicals.

### **Hermetically sealed means safety**

As soon as the liquid is transported by road or sea, it must be unloaded into storage tanks for storage or distribution. When unloading at the pumping station, certain issues are very important.

In addition to the quality of the hose



and the links between the storage vessel and the tank, the pump is an essential element for the safe transportation of the liquid. The pump must quickly and efficiently empty the content of the tanker without the risk of leakages. The system should be a solution which is both reliable and requires minimal maintenance.

### *Liquids:*

There are many types of aggressive liquids:

- Volatile liquids such as solvents
- Compressed or condensed gases, such as liquid oxygen or hydrogen
- Flammable liquids such as oil fuel
- Oxidants and organic peroxides such as hydrogen peroxide
- Toxic and infectious substances such as cyanide based compounds
- Radioactive materials, such as waste water from power plants
- Corrosive substances such as sulfuric acid
- Various other dangerous liquids





**No mechanical seals: No leakage**

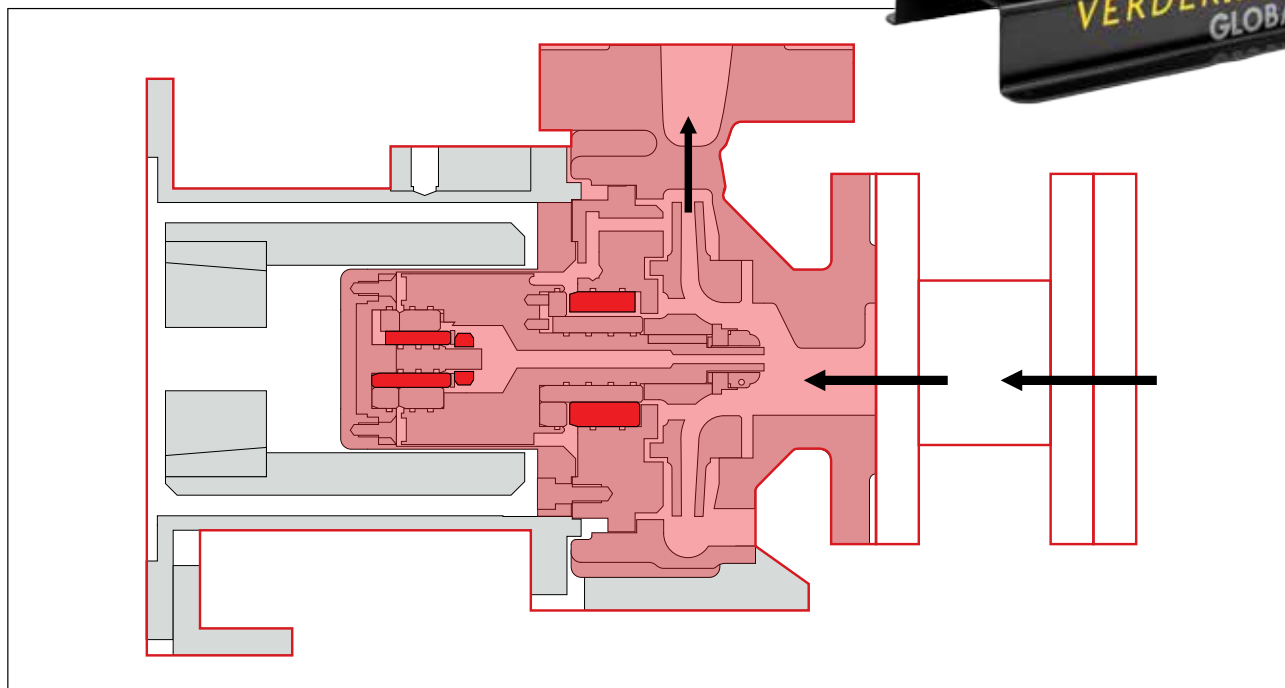
A magnet-driven centrifugal pump offers the best level of protection against leakage. The design itself is leak-free - the pump has permanent magnets with the liquid secured in the pump chamber. The magnetically driven concept requires no mechanical seals subject to abrasive wear between fluid, drive mechanism and the environment.

The liquid is completely separated of the engine, only connected by the magnetic force of an external magnet

(motor side) and the inner magnet (liquid side) which in turn, powers the centrifugal impeller.

*A magnetically driven pump is therefore a much safer pump as there is no possibility for the fluid to leak. Under normal running conditions the pump can run for years and years, before even the bearing assembly needs to be replaced. In many instances, mag drive centrifugal pumps are returned for refurbishment after 15 or 20 years+.*

For more information about pump solutions for the storage and the transfer of aggressive and hazardous liquids please contact your local Verder pump specialist.



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